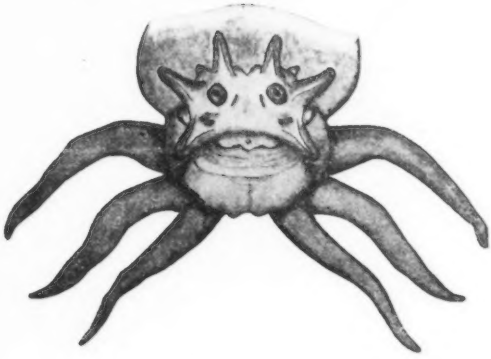
Vol. XIII. No. 2.

ENTOMOLOGICAL NEWS



Quisnam sexcaudatus?

FEBRUARY, 1902.

EDITOR:
HENRY SKINNER, M. D.
PHILIP P. CALVERT, Ph.D., Associate Editor.

ADVISORY COMMITTEE:

EZRA T. CRESSON. CHARLES A. BLAKE. CHARLES LIEBECK.
PHILIP LAURENT. WILLIAM J. FOX. CHARLES W. JOHNSON.
HENRY L. VIERECK. J. A. G. REHN.

PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE.

1902.

Entered at the Philadelphia Post-Office as Second-Class Matter.

ENTOMOLOGICAL NEWS

Published monthly, **excepting July and August,** in charge of the Entomological Section of the Academy of Natural Sciences, Philadelphia, and the American Entomological Society.

ANNUAL SUBSCRIPTION, $1.00 IN ADVANCE.

Outside of the United States and Canada, $1.20.

Advertising Rates: 30 cents per square inch, single insertion; a liberal discount on longer insertions. No advertisement taken for less than 60 cents—Cash in advance.

☞ All remittances should be addressed to ENTOMOLOGICAL NEWS, Academy of Natural Sciences, 19th and Race Streets, Philadelphia, Pa.

EXOTIC LEPIDOPTERA

Large catalogue free. Explanatory and descriptive catalogue. Over 300 descriptions and many interesting notes, 12 cents. 100 named specimens, first quality, ex Assam, 40 different species in paper, including *P. bootes, evan, gigas*, etc., mailed free on receipt of P. O. O., value $4.00. Fine series of mimetic and seasonal forms.

Ernest Swinhoe - - Avenue House, Oxford, England

COLEOPTERA

OF NORTH AMERICA FOR SALE VERY CHEAP.
LIBERAL DISCOUNTS ON LARGE ORDERS.

John D. Sherman, Jr., 148 E. 18th St., New York

NEW PUBLICATIONS.

COLEOPTERA.—A study of the species of *Tachys* of Boreal America, by Roland Hayward. 1900. 48 pp., 1 pl. . . $ .50

HYMENOPTERA.—New species of North American Cynipidæ, by H. F. Bassett. 1900. 27 pp. 25

LEPIDOPTERA.—Revision of the American species of the genus *Cænonympha*, by Henry Skinner, M.D. 1900. 11 pp., col. pl. 1.00

Revision of the species of *Xylina* Ochs., by John B. Smith. 1900. 46 pp., 5 pls. 60

Revision of the species of *Acontia* Ochs., by John B. Smith. 1900. 38 pp. 40

On *Pigritia* Clem., by W. G. Dietz, M.D., 1900, 20 pp., 2 pls. . .25

NEUROPTERA.—Descriptions of new North American Neuropteroid Insects, by Nathan Banks. 1898. 20 pp. 20

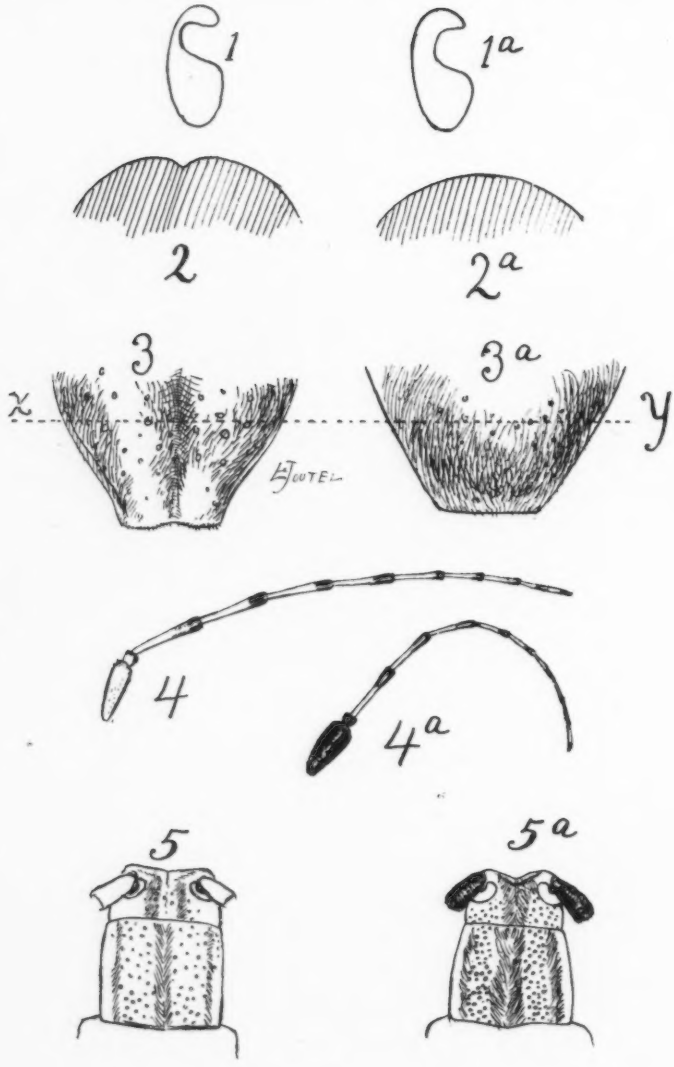
New genera and species of Nearctic Neuropteroid Insects, by Nathan Banks. 1900. 21 pp 20

Catalogue of the Odonata (Dragonflies) of the vicinity of Philadelphia, with an introduction to the study of this groups of insects, by P. P. Calvert. 1893. 125 pp., 2 pls. 1.25

Sent on receipt of price. New Price Lists may be had on application to

E. T. CRESSON, Treasurer, P. O Box 248, PHILADELPHIA, PA.

When Writing Please Mention "Entomological News."



SAPERDA (JOUTEL).

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. FEBRUARY, 1902. NO. 2.

CONTENTS:

Joutel—New Species of Saperda..... 33
Murillo—The Eumæus Debora..... 35
Fox—Letters from Thomas Say to John F. Melsheimer, 1816-1825.—X, XI. 38
King—Some New Coccidæ..... 41
Lidgett—Aspidiotus Hederae in Australia..... 43
Photographs of Entomologists..... 45
Williamson—A New Species of Gomphus (Odonata) related to G. fraternus..... 47
Ashmead—A New Bumble Bee from Colorado..... 50
Dod—Pests and Grease..... 50
Editorial..... 54
Entomological Literature..... 55
Notes and News..... 59
Doings of Societies..... 60

A New Species of Saperda.

By LOUIS H. JOUTEL.

On a recent visit to Philadelphia to examine and study the material in the collections of the late Dr. G. H. Horn and the American Entomological Society, for a forthcoming paper on the genus *Saperda* by Dr. E. P. Felt and myself, I found in the collection of Dr. Horn several females of an undescribed species having characters of both *calcarata* and *mutica*, but specifically distinct from either. The specimens in the Horn collection were isolated by Dr. Horn who evidently considered them as different.

Since then I have received material from the National Museum, Washington, D. C., and found in it a fresh male of the same species. I take pleasure in naming it in memory of Dr. Horn.

Saperda hornii, sp. nov.

Black; shining, entirely covered with a dense layer of light yellowish gray hair lighter beneath and diversified above with irregular blotches and streaks of dark yellow, arranged on the elytra in broken and irregular longitudinal lines; the line nearest the outer margin and just below the

humeral angle unbroken, except by the punctures, and continuing nearly to the tip. Elytron obliquely narrowed at apex. Thorax cylindrical with a longitudinal stripe of dark yellow hair on each side and on top, underside yellow. In the male the thorax is very long, being about one-third longer than wide; in the female as long as wide. Scutellum yellow. Entire insect covered by rather large and deep glabrous punctures slightly smaller beneath; they are much larger than those of *mutica* and only about one-half as numerous. Head; hairs yellow, changing to gray at the labrum. Legs and underside of body light yellowish gray, with glabrous punctures; antennæ annulate except the first joint, which is entirely covered with light gray hairs, and is moderate in thickness, not being enlarged as in *obliqua* and *mutica*, rest of antennæ quite robust with basil two-thirds of each joint covered with light gray hair, remainder black. The pygidium of female has a deep longitudinal depression along the median line, dividing it into two lobes, tip also bilobed. Eyes nearly divided. Size, ♂ 16 mm. ♀ 20 mm.

Types, one female (Calif.) collection Dr. Horn. One alem (Yosemite, Calif.), collection Coquillett, National Museum. Male and female concolorous.

This insect can be readily separated from *mutica* by the bilobed last dorsal segment (Figs. 2 and 3), which in *mutica* is very convex (Figs. 2*a* and 3*a*) and, therefore, highest in the middle; also by the first joint of the antennæ being gray and moderate in thickness, while in *mutica* the joint is swollen and black, the rest of the antennæ in *mutica* is also thinner and shorter (Figs 4 and 4*a*). The eyes are much more divided than in *mutica* (Figs. 1 and 1*a*); the thorax is about as wide in front as back, but in *mutica* the front is narrowed (Figs. 5 and 5*a*).

It is very desirable for the monograph on *Saperda* by Dr. Felt and myself mentioned above, that we see more material in the genus from all parts of the West, and all material sent me for study will be returned.

EXPLANATION OF FIGS.

Fig. 1. Eye of *hornii*, showing degree of divison compared with Fig. 1*a*, eye of *mutica*.

Fig. 2 and 2*a*. Transverse section of last dorsal segments of *hornii* and *mutica* at dotted line shown in Fig. 3 and 3*a*.

Fig. 4. Antennæ of *hornii*; Fig. 4*a*. Of *mutica*.

Fig. 5. Head and thorax of *hornii*; Fig. 5*a*. Of *mutica*.

All figures greatly enlarged.

The Eumaeus Debora.

By Prof. Luis Murillo, Jalapa, Mexico.

The beautiful Mexican Lepidopteron, known here under the name of Guinea butterfly, visits us nearly every season even in winter, always in the afternoon and never in the morning. Its flying is apparently very slow and it seems not to rest on any plant. But if in our garden there is a *Dioon edule*, or *Macrozamia*, or the graceful and worthy Japanese specimen called *Cycas revoluta*, then it hastens its flying around a plant until it sits on the reverse of its tender leaves.

The cycads to which the mentioned vegetable belongs are very interesting plants. They form a link between the monocotyledones and the dicotyledones. They are like conifers, and they are considered by some botanists as a subdivision of the same family, but their features are so clear that there is no doubt but that the *Gymnosperma* class can be divided into three families—*Cycadea*, *Coniferæ* and *Gneteæ*.

The flora prior to ours exhibited giantlike specimens of *Cycadea*, as testified by the 250 species of fossils that have already been classified.

They appear in the pit-coal terrane represented by the *Næggerathia* and the *Pterophyllum*, but they are yet rare in the beginning of the Trias. At the end of the Triassic epoch they are plentiful; however, in the middle of the Jurassic period is when they reach their largest development. Once these have been classified: in the Rhætic about fifteen species, in the Lias seventeen, in the Oölite sixty-three, in the Superior Jurassic sixteen, in the Wealdian thirty; then they diminish sensibly in the Cretaceous, and increase as we ascend in the Tertiary layers. At present this family has been reduced, and its representatives live preferably in tropical climates. Perhaps the *Eumæus debora* guest of the actual *Cycadea* is one of the most ancient Lepidoptera.

Now I just remark that in the same way these plants have a great vitality, for if a trunk of one of them is got without leaves and roots, and left abandoned for one year, it is not a long time before it is covered with tufts of leaves, and in a few years the plant recovers its ancient vigor. So the *Eumæus*

debora is shown to have great vitality, for if it is kept in a dark box some hours after being born, it can remain even for twenty-six days without taking any food, and, if left free at the end of this time, flies swiftly without showing any exhaustion. I do not know any Lepidoptera that can bear so many days of captivity and abstinence. Is there any relation between the vitality of the insect and the vegetable it feeds on? I do not know it.

When the female of the *Eumæus debora* has already chosen the tender leaf of a Cycad, it lays, one by one, on the under side of one of the most tender small leaves about 50 or 60 spherical eggs, with half-millimetre diameters, of white color, covered by a resistant skin and invested by a sticky substance that makes them adhere to the surface of the leaf.

If time is propitious—I mean if days are warm—after a while and by sunlight action the shells are broken, and some small worms of reddish color appear, which begin to gnaw the tender part of the leaf nearest them. Thirty or forty days after, the caterpillars have reached their full development. The caterpillar presents an elongated body, half-cylindrical, with the flat part toward the extremities, 20 millimetres long by 5 in diameter, divided transversely by nine red bands that are white-striped on their superior part. All the skin is full of short and sparse hairs. The caterpillar has sixteen legs disposed in pairs, being the three forelegs, real ones and the others false.

The first three segments of the caterpillar's body present greater consistence than the others. The real legs are the ones which the animal will conserve at last.

The false legs are short and fleshy processes which in their apex contain a cavity that, acting as an air-tight cell, assists the animal admirably with its locomotion movements. It has a dark-gray head and is endowed with great mobility; eyes are small and simple. The mouth is provided with powerful jaws with which it cuts the strong leaves of the plant it lives on. The caterpillar undergoes during life even three changes, and, to leave its old tegument, remains inactive without taking any food until two or three days.

At the end of forty-five days the caterpillar loses its brightness of color and associates with its neighbors to seek for the

reverse of a hard and strong leaf, that can keep it from the rains and its enemies, which are chiefly the birds. Having chosen the spot, they lay a long silk net, made by themselves. This being finished, they each choose a place side by side and remain very quiet, without taking food, about two days, and the third day they are suspended vertically from the extremity of the abdomen, and then, by means of the belt which they make with very fine threads, become suspended horizontally. Once the insect is in this position, it removes its caterpillar garment and begins its chrysalis life. The chrysalis is about 18 millimetres in size, of a dark-red color, black-spotted. Two or three months, according to the time of the year, the *Eumæus debora* remains in a chrysalis state, and when this time is up, on a warm morning, between nine and ten, it breaks the antero-superior part of the cover in which it was closed, and the butterfly comes out in such a state of weakness that it can hardly stand.

At this moment the colors of the butterflies are opaque and the wings are folded against the body.

The animal gets a very bright aspect by the action of the sunbeams, spreads its wings and commences to fly slowly. Two hours after, it enjoys full movements, expelling through the anus a yellowish liquid of a particular odor, and rushes into the world of adventures.

The male, after accomplishing the copulations, flies about for a time, and the female, once fecundated, hunts anxiously for a Cycad to deposit its eggs in, dying some hours after.

The *Eumæus debora*, in its perfect state, is a Lepidopteron, 30 millimetres long, with its four round wings of velvet aspect, bright black color, full of numerous and symmetrical golden spots, on its inferior side, and blue and green, with metallic reflections, on the superior part. The posterior borders of the wings are fringed with a very fine white flounce that takes a tint intensely black on the abdominal region. This is also of a very black color and is covered with thin filiform scales. The thorax shows on the back, a blue spot, with golden reflections. The head shows two great compound eyes bordered by a circle of white, and small scales and two soft and flexible antennæ. The palpi (lips) are prominent.

The *Eumæus debora* in its perfect state, feeds on sticky substances which flow from the trunks, leaves and fruits of the *Cycadea*.

Letters from Thomas Say to John F. Melsheimer, 1816-1825.—X, XI.

Philad^{a} April 26th 1823

My Dear Sir !

I duly received y^{r} excellent letter & more recently the valuable box of insects you were so good as to send me. I beg you to accept my most sincere and hearty thanks for them, as well as for the excellent remarks with which they were accompanied. Most interesting as they truly are, I have to regret to say that I have not yet had leisure to examine them as closely & attentively as I wish to do. My time has recently been fully occupied with preparations for another western Exped^{n} under the orders of the Secretary of War, for the exploration of the St. Peter's river & the 49° of lattitude. We expect to depart on that service on tuesday next, & if our estimate of distance & time is accurate, we shall return here next autumn, if no unforeseen casualty occurs. I am sorry that our correspondence which is so interesting to me, is thus so much & so frequently interrupted, but we must endeavour, by & by, to compensate for the hiatus by longer and more frequent letters. I have begun to publish pretty largely on insects, & shall endeavour to send you the commencement of a paper on the Carabii, now printing for our Philosophical Transactions ; you will observe that I have taken the liberty to mention your name not unfrequently in that paper as well as elsewhere, as in duty bound as well as inclination & justice. I have also quoted your catalogue for every species that I could identify, that is, for every species you or your father sent me. I have also appropriated Mss. enough to supply our Journal during my absence, this little work I have directed to be regularly sent to you. It will afford me great pleasure to learn that these several essays interest you. In the mean time I remain as ever

truly & affectionately your friend
Thomas Say

Philad^{a} Novemb^{r} 30th 1823.

My Dear friend !

In my last letter I informed you of the reception of the very valuable box of insects with which you favoured me, & stated at the same time that my haste of preparation for another journey through the wilderness prevented my making any remarks at that time upon the interesting individuals it contains. I am happy to say that this journey has been successfully performed, & we have all returned to our families & friends. Our rout was as follows, viz. We departed from this place & arrived at Wheeling by way of the great national road ; thence to Columbus, Fort Wayne, & Chicago at the southern extremity of Lake Michigan ; making another outfit at that place, we struck across the country by rout till then untravelled excepting by Indians & their associates to Prairie des Chiens on the Mississippi. We then ascended the Mississippi to the Falls of St. Anthony, thence along the St. Peters to its source ; thence directly north, by way of Sioux river & Red river to Pembinaw, a settlement formed by Lord Selkirk ; there we established the north boundary line of the United States & took possession of that part of the country with the customary military ceremonies. We then descended the river into the British territories, passed through the lower portion of Lake Winnepec, through the Lake of the woods which is thickly studded with charming islands, through Rainy lake & Dog river to Lake Superior. Within about fifty miles of this lake the whole river is precipitated over a ledge of rock into a rocky chasm to the depth of 130 feet, the concussion of the water is terrific & causes a very sensible trembling of the earth around. We were under the necessity of crossing Lake Superior from West to East in an open flat bottomed batteau during the equinoctial storm. This we accomplished in fifteen days. We then went to Mackinaw, then passed through Lakes Huron & Erie, & visited the falls of Niagara ; at the Genesee river we entered Clinton's grand Canal & after a voyage through it of the most agreeable kind, at the rate of four miles an hour night & day, we arrived at Albany.

On this extensive round we suffered but little for want of

food, & our dangers from Indian hostility were far less than those of our former expedition. We passed over that immense country in six months so that you will be well aware that we had not much leisure to make very abundant collections; nevertheless I obtained some insects that are of some interest.

You will observe by the number of the Journal that I now send, my commencement to describe our Coleopterous insects. This paper is to include such as were obtained during our expedition to the Rocky mountains. It will be succeeded by a description of the insects of this country generally. You will observe that I have carefully quoted your "Catalogue" for all such species as I have been favoured with from you & from your father. I hope to send you soon an extensive paper on the families of Carabus, Dytiscus & Gyrinus; it is already printed off. Also a paper on the Hymenoptera, & another on the Neuroptera which I have had published and of which I expect soon to have some extra copies. Whatever I publish shall be submitted to your inspection & I beg in return your candid opinion and usual critical observations upon them. I have the ambition to do as much as possible & to perform my work as well as I can, I must therefore task the acumen of my friend to correct my errors when he perceives them, & to teach me to do better when he perceives the way open to amendment.

* * * * * * * * *

I remain truly & cordially
your friend & Obd^{t} Serv^{t}
Thomas Say

[NOTE.—In a footnote appended to the first of these letters, F. E. Melsheimer is said to have probably represented the third generation of the family in America. I now learn that he was the brother of J. F. Melsheimer.

This last letter brings this series to a close, as the following two or three letters, dated 1824–25, are not thought of sufficient general interest to justify their publication here.—W. J. F.]

MR. S. H. HAMILTON of the Academy of Natural Sciences, of Philadelphia, is about to visit Cuba on a collecting trip. He will be pleased to hear from any one wishing Cuban insects. His address will be Santiago, care of "General Delivery."

Some New Coccidae.

By GEO. B. KING, Lawrence, Mass.

To-day, April 11th, I have just received a very pretty and distinct ant-nest species of coccid from Prof. Cockerell, for which he suggests the name *Ripersia fimbriatula*, giving also some descriptive names.

Ripersia fimbriatula n. sp. Ckll and King.

♀.—Small, oval, 1½ mm. long, 1 broad, of a light yellow color, with a marginal fringe of cottony filaments and the entire body coated with white powder. Placed in alcohol, they are light, delicate yellow tinged with green. Boiled in caustic potash, they turn to a bright red-brown color. The internal juice being removed, the derm is colorless; mouth-parts, antennæ and legs light yellow. Antenna six jointed, with the sixth longest, then three. One + two next and equal. Five is a little longer than four, which is the shortest. Formula, 63(12)54. Measurements of the several joints: (1) 40, (2) 40, (3) 56, (4) 20, (5) 32, (6) 76. All of the joints have short, thin hairs, those on the sixth being somewhat longest. Legs stout, quite bristly; middle leg, coxa 48 long. Femur, with trochanter, 160; tibia, 88; tarsus, 76; claw 20, broad; coxa, 100; trochanter. 60; tibia, 36; tarsus, 28. Claw thin, sharp, not much curved. Digitules of tarsus and claw minute, indistinct, with small knobbed ends. Anal ring normal, with the usual six but thin bristles. Caudal tubercles small, with one short hair.

Hab.—Las Vegas, New Mexico, April 7, 1901, in nest of *Lasius americana* Em. under rocks; collected by Mrs. Wilmatte P. Cockerell. Also found last year at Santa Fe, N. M., by Mr. T. D. A. Cockerell, but the material too scanty for description. This species is quite different from a yellow species found in ant nests in Massachusetts, *Ripersia flaveola* Ckll., which has practically seven jointed antennæ and is larger, although we find some individuals with only six joints, measuring as follows: joint (1) 40, (2) 44, (3) 44, (4) 36, (5) 28, (6) 72. *R. fimbriatula* seems to be nearer to a species with six jointed antennæ, which was mixed with a lot of coccids from ants' nests in Massachusetts found by me and described by Prof. Cockerell in Can. Entom., 1896, p. 223, as *R. lasii*, the latter having jointed antennæ. I propose to call this six jointed form, which is certainly distinct, *Ripersia candidata* King. Although the antennal formula of this species is nearly the same as that of *Ripersia fimbriatula*, the respective

lengths of the joints are very different, as will be seen from the following measurements: joint (1) 32, (2) 28, (3) 40, (4) 16, (5) 20, (6) 68. Formula 631254. The antennæ are also very much smaller and, in fact, the smallest of our American species. Prof. Cockerell remarks that in its marginal fringe of cottony filaments *R. fimbriatula* resembles the New Zealand *R. formicicola* Maskell.

Ripersia cockerellae n. sp.

♀.—Red-brown, oval, 2 mm. long, 1½ broad, with two caudal cottony filaments. The insect is covered with a thin coating of white powder, which gives it the appearance of being a light pink color when alive. After being put in alcohol it soon turns to a cinnamon brown and quite translucent. Boiled in caustic potash, they turn to a dark claret color.

Mounted specimens colorless. Legs, antennæ and mouth-parts ochreous. Mentum elongate, dimerous, thickly beset with short, fine hairs. Antennæ seven jointed, short, not stout. Joint seven is longest, then one, two and four next and equal, then six, which is very little larger than 5. Joint three is the shortest. Formula: 71(24)653. All of the joints have several short hairs. Measurements of the antennal joints: (1) 40, (2) 36, (3) 24, (4) 36, (5) 28, (6) 32, (7) 64.

Front leg ordinary, with the coxa 96 long. Femur, with trochanter, 180; tibia, 132; tarsus, 72; the width of coxa, 84; trochanter, 64; tibia, 28; tarsus, 28. The claw is 28 long and decidedly thinner than in any of the genus known to me. As to the digitules of the tarsus and claw, I was unable to find these. If these are present in this species they must be very minute indeed. Anal ring normal, with the usual six hairs and not very long or stout. Caudal tubercles with one not very long bristle and two short spear-shaped spines and several short, thin hairs.

Hab.—In nest of *Lasius americanus* Em., at Beulah, Sapello Canon, New Mexico. Altitude, 8000 feet. This is the highest altitude where a mealy bug has been known to live. Found by Mrs. and Prof. Cockerell, and named after Mrs. Cockerell, who was the first lady to write to me on a biological subject. The species is easily known from *R. kingii* Ckll., to which it is most allied, by its antennæ of seven joints, with the third shortest; by the leg, which has the tibia and tarsus much shorter and both equal in width; the very thin, sharp claw, the central loop being much thinner and shorter and the mentum well covered with short, fine hairs.

Phenacoccus simplex n. sp.

♀.—Oval in shape, 3 mm. long, 2 broad, of a reddish-brown color,

Body thinly covered with a white secretion. Segmentation distinct. Boiled in KOH, cleared and mounted in balsam, practically colorless except around the area of the grouped spines, which is tinged with yellowish-brown. These groups are variable in size and the spines are conical in shape, short, stout and placed close together. The dorsum is quite thickly beset with short conical spines and thin, not at all long, hairs. These not uniform in length. Legs, mouth-parts and antennæ yellowish-brown. Legs long and stout, quite hairy. Middle leg coxa 320 long; femur, with trochanter, 560; tibia, 500; tarsus, 200; claw, 60. Antenna nine jointed, measuring as follows in length: (1) 120, (2) 120, (3) 140, (4) 76, (5) 80, (6) 88, (7) 80, (8) 92, (9) 140. Formula: (39) (12) 86 (57) 4. All the joints have short, thin hairs. Segments well marked by suture. Mentum large, apical half with several long hairs.

Hab.—Lone Pine, California, on *Atriplex*. Collector unknown. Sent to Prof. Cockerell, who turned it over to me. Superficially it looks very much like a *Dactylopius*. On the same plant were some *Ceroplastes*, probably *C. irregularis* Ckll. new to California.

Aspidiotus Hederae in Australia.

By James Lidgett.

In September, 1899, I forwarded some species of Coccidæ collected in Victoria to Dr. L. O. Howard, including a species of *Aspidiotus* in situ, which was quite unknown to me and distinct from any of our Australian species. This material was subsequently handed over to Mr. C. L. Marlatt to work up, and recently I received from that gentleman a communication, in which he recognized the insect as *Aspidiotus hederæ* Vallot.

This is the first time *A. hederæ* has been discovered in the Australian region, and is, therefore, another illustration of how civilization is scattering over the earth's surface many kinds of insects. I have not yet been able to ascertain the name of the host plant, which is an exotic tree resembling American ash. It was planted fourteen years ago from Melbourne nursery stock. The trunk, branches and leaves were infested, the ♂ scales being confined to the latter.

By way of illustrating how scale insects may be—and, indeed, often are—disseminated, it may here be remarked that

the tree referred to above is growing quite close to a butter factory, and I myself have often seen drivers of milk carts cutting switches therefrom to use instead of a whip, and on the return journey cutting off the twigs and leaves, leaving them scattered along the road, the switch, no doubt, ultimately reaching the homestead.

The range of distribution of *hederæ* is evidently extending. Mr. G. B. King reports it from Bermuda (Psyche, p. 350, April, 1899) on *Cycas revoluta*, and says it is a very common scale throughout the United States, and in his "Contributions to the Knowledge of Massachusetts Coccidæ," III, it is stated to be "a very common pest in all greenhouses at Lawrence." Now that it has established itself In Australia, it will be interesting to compare it minutely with *Aspidiotus carpodeti* of Maskell, a New Zealand species infesting *Carpodetus serratus* and *Vitex littoralis*, and which Professor T. D. A. Cockerell has put down as a synonym of *hederæ*. But I cannot quite follow Prof. Cockerell. In January, 1899, in the "First Supplement to the Check-List of the Coccidæ," *Asp. carpodeti* is one of 23 synonyms of *hederæ*; yet in May of the same year the same author, in "The Industrialist," identifies a species from Oregon as *Asp. hederæ* var. *carpodeti*, Mask., on oleander and pandelon.

Quite recently I had an opportunity of examining the type of Maskell's *A. carpodeti*, and compared it with specimens of *A. hederæ* as determined by Mr. C. L. Marlatt. I am now quite satisfied that *carpodeti* is a very distinct species, with four lobes, median pair unusually large, second pair very similar to *nerii*. Four groups of spinnarets or ventral glands, cephalolaterals 4 to 6 orifices, caudolaterals 8 to 12. ♀ puparium convex, brown in color; exuviæ central, quite blackish. Maskell says that some specimens are slightly elongated. Average diameter 1.75 mm. ♂ puparium narrower, parrell-sided, brownish in color. Average length 1.58 mm. Adult ♂ of normal form. Antenna of ten joints, the fifth, seventh, eighth and ninth longest. Abdominal spike excessively long, at its base a large tubercle.

The very prominent median lobes are distinctly unlike the abdominal extremity of *hederæ*.

♀ puparium of *hederæ* is convex, circular, grayish-brown in color. Exuviæ yellow, central or nearly so. Adult ♀ with six large and very distinct lobes, which alone clearly separates *hederæ* from *carpodeti*.

I am very sorry that any confusion should have arisen as to the validity of Maskell's species, and I would take this opportunity of protesting against the practice of invalidating another author's species unless really warranted, more particularly so when the author of that species is dead. The practice is becoming intolerable, and the sooner it is checked the better, if our classification "as a means to an end" is to be successful.

Photographs of Entomologists.

The following is a list of the photographs of entomologists contained in the albums of the American Entomological Society. They are a source of great interest to the members of the Society and also to many visiting entomologists. It is our desire to make the collection as complete as possible, and if your name is not in the list please send us your photograph. There are quite a number of persons not represented, and we sincerely hope they will have their pictures taken at once.

HENRY SKINNER.

Abbott, W. L.	Beutenmuller, Wm.	Cassin, John.
Adams, C. C.	Bergroth, E.	Castle, D. M.
Agassiz, Louis.	Bethune, C. J. S.	Chatfield, A. F.
Aich, Hermann.	Billings, B.	Clemens, Brackenridge.
Akhurst, John.	Blaisdell, F. E.	Cockerell, T. D. A.
Albright, Max.	Blake, C. A.	Conradi, A.
Aldrich, J. M.	Bland, J. H. B.	Coquillett, D. W.
Alwood, W. R.	Boerner, C. R.	Cottle, J. E.
André, Ernest.	Bolter, Andrew.	Couper, Wm.
Angus, James.	Brackett, G. E.	Cresson, E. T.
Ashmead, W. H.	Breed, W. P.	Cunningham, B. L.
Ashton, T. B.	Brendel, E.	Dagget, F. S.
Baird, S. F.	Britton, W. E.	Danby, W. H.
Banks, Nathan.	Bruce, David.	Davis, G. C.
Bang Haas, A.	Burrison, H. K.	Davis, John.
Barrett, O. W.	Calder, E. E.	De Vesey, J. X.
Bassett, H. F.	Calverley, Stephen.	Dietz, W. G.
Beales, E. V.	Calvert, P. P.	Dyar, H. G.

Edwards, Henry.
Edwards, W. H.
Ehrhorn, E. M.
Ehrmann, G. A.
Elrod, M. J.
Evans, J. D.
Evett, Wm.
Fall, H. C.
Fay , H. T.
Feldman, Henry.
Felt, E. P.
Fenyes, Adelbert.
Fernald, C. H.
Field, W. L. W.
Fitch, Asa.
Fox, W. J.
French, G. H.
Fuchs, Charles.
Fyles, T. W.
Gerhard, W. J.
Gillette, C. P.
Goding, F. W.
Goodhue, C. F.
Grey, Wm.
Grote, A. R.
Gundlach, Juan.
Hagen, H. A.
Haldeman, S. S.
Hamilton, John.
Hancock, J. L.
Harris, T. W.
Harvey, F. L.
Heiligbrodt, L.
Helmuth, C. A.
Hill, George.
Hillman, F. H.
Holland, W. J.
Hopkins, A. D.
Horn, G. H.
Hornig, Herman.
Huard, V. A.
Hubbard, H. G.
Hudson, G. H.
Hulst, G. D.
Huntington, W. S.
Johnson, C. W.
Kayser, Wm.
Kellicott, D. S.
Kincaid, Trevor.
King, G. B.
Kirtland, J. P.
Klages, E. A.
Knaus, W.
Knight, J. F.
Kraft, L.
Kunze, R. E.
Laurent, Philip.
Le Baron, Wm.
Le Conte, John.
Le Conte, J. L.
Lembert, J. B.
Lewis, Samuel.
Loew, H.
Longley, W. E.
Linne, Carl von.
Lintner, J. A.
Lyman, H. H.
Martindale, I. C.
Mengel, L. M.
McKnight, C. S.
McAllister, J. W.
Michel, John.
Moffat, J. A.
Monell, J. T.
Morgan, H. A.
Morris, J. G.
Muller, A.
Nason, W. A.
Nell, Philip.
Newcomb, H. H.
Neumoegen, B.
Newman, Edw.
Norton, Edw.
Orne, John.
Osburn, Wm.
Osborn, Herbert.
Oslar, E. J.
Osten Sacken, Baron.
Owen, E. T.
Patton, W. H.
Peale, T. R.
Pearsall, R. F.
Pergande, Theo.
Pilate, G. R.
Pine, W. S.
Piper, C. V.
Poey, F.
Pool, Isaac.
Popenoe, E. A.
Provancher, L.
Putnam, J. D.
Radaszkowski, ——
Rathvon, S. V.
Rauterberg, F.
Reakirt, Tryon.
Reinick, W. R.
Ricksecker, L. E.
Ridings, J.
Ridings, J. H.
Riley, C. V.
Roberts, C. H.
Robertson, Charles.
Robinson, C. T.
Say, Lucy W.
Say, Thomas.
Sanborn, F. G.
Sartorius, C. W.
Saunders, Wm.
Schafhirt, F.
Schneider, Louis.
Scudder, S. H.
Seiss, C. F.
Sharp, Alda M.
Sheriff, F. A.
Shimer, Henry.
Skinner, Henry.
Slingerland, M. V.
Slossons. A. T.
Smith, Emily A.
Smith, Frederick.
Smith, J. B.
Smyth, E. A.
Snyder, A. J.
Sonne, C.
Southwick, E. B.
Stainton, H. T.
Studinger, Otto.
Stauffer, Jacob.

Strecker, Herman.
Stromberg, C. W.
Sumichrast, F.
Toumey, J. W.
Townsend, C. H.
Twogood, F. D.
Ulke, Henry.
Van Duzee, E. P.
Wadsworth, Miss M.
Walker, Francis.
Walsh, B. D.
Walsingham, Lord.
Walton, L. B.
Watson, John.
Webster, F. M.
Weed, C. M.
Weed, H. E.
Weidmeyer, J. W.
Welles, C. S.
Wenzel, H. W.
Wenzel, W. F.
Westcott, O. S.
Westwood, J. O.
Wickham, H. F.
Wilson, T. B.
Williston, S. W.
Wilt, Charles.
Wingate, J. D.
Wolloston, ——
Wood, W. C.
Wood, W. H.
Young, D. B.

A New Species of Gomphus (Odonata) related to G. fraternus.

By E. B. Williamson.

In eastern North America the hitherto recognized species—*externus*, *fraternus*, *crassus*, *dilatatus* and *vastus**—constitute a group of the genus *Gomphus* characterized by the form of the postanal cells, the color pattern of the thorax, and especially by the abdominal appendages of the males. *Dilatatus* and *vastus* have the fronto-nasal sature black, and the eighth abdominal segment immaculate above, the face being unmarked and segment eight having a basal yellow or yellowish spot in *externus*, *fraternus* and *crassus*. The following species which appears new finds its nearest ally in *fraternus*. Dr. Calvert's recent critical study of *fraternus*, *externus* and *crassus* (Ent. News, March, 1901, pp. 65–73, pl. iii, 18 figures) makes it possible to describe this species without indicating at length points of difference and similarity. What is here said constitutes a fourth vertical column as an addition to the three vertical columns of descriptive matter in Dr. Calvert's paper.

Gomphus hybridus n. sp.

Abd. ♂, 35–37; ♀, 35–36. H. w. ♂, 27–8; ♀. 29.

(1). Superior abdominal appendages viewed from above not as robust as *fraternus* and *crassus*, with the apices slenderer, separated by a distance greater than the length of one appendage;

(2). inner edge of each appendage concave in general direction, straight

*I know *ventricosus* and *consanguis* only from descriptions. They seem to be most closely related to *vastus* and *dilatatus*.

or slightly convex from about its middle to near the apex; the outer edge straighter than in *fraternus*, particularly at base, not angulate;

(3). in profile upper edge convex;

(4). the lower edge tapering to the apex in its apical fourth or fifth, a small tubercle (larger than in *fraternus* or *crassus*) where the tapering begins, at which point the appendage is hardly thicker than elsewhere in its post-basal portion; between this tubercle and the apex the edge is concave without a convexity as in *fraternus;*

(5). viewed obliquely from above at 45° with the horizontal plane the appendage shows no tubercle basally to the one seen in profile.

(6). Branches of inferior appendage with the apices barely outside of or just at the outer edge of the superior appendages;

(7). undivided portion when viewed from below with the edge between the branches forming an undulating curve, less than a semicircle, or with a short portion at the middle straight, in either case a distinct concavity before the apex of each branch.

(8). Vulvar lamina less than half as long as the sternum of the ninth segment, widened at its base as in *fraternus;* from this widened portion the sides extend parallel to the apices of the two contiguous branches, the incision between which has usually an angle of almost 90°, with the sides straight or slightly convex.

(9). Third femora of female without external yellow stripe.

(10). Dark stripe on first lateral suture in both sexes not interrupted.

(11). Vertex of female with a brown or whitish spine at either end of the transverse ridge.

(12) In both sexes tibiæ black, the superior surface with a pale yellow stripe, usually extending from the base to about the middle, rarely to the apex, and rarely reduced to a basal spot or streak.

(13). Dorsal spot on seventh abdominal segment of male one-half to three-fifths as long as the segment.

(14). Second femora of female beneath dull brownish, obscure green towards apex.

(15). In both sexes the tenth abdominal segment is obscure brown, paler than segments eight and nine, with a round, yellow, median, dorsal spot, which may be so obscured as to be almost invisible.

(16 and 17). Segments seven, eight, nine and ten are obscurely marked and shaded with black, brown and yellow, their general color being lighter than the segments before them, ten being the palest one; the color pattern on these segments is not as sharply defined as in related species, being in general, like *fraternus.*

(18). Margin of occiput similar in outline in both sexes; slightly higher in the female, high, uniformly convex or, more rarely, with the sides straightened or very slightly concave.

(19, 20 and 21) See (16 and 17) above.

Suture between nasus and frons obscure, slightly darker than the adjacent parts, best shown in very teneral individuals which also show

the same dusky color on the anteclypeus. Prothorax largely yellowish. United mid-dorsal thoracic stripes wider than in *fraternus*, widening below, as in *vastus*, to a greater or less extent, so that the pale area between the antehumeral and median stripes is greatly reduced, as compared with *fraternus*; humeral and antehumeral distinct, rarely fused for a short distance above; stripes of lateral sutures complete, the area between more or less obscured. Femora reddish brown, paler below; second tarsal joint yellowish dorsally, most distinct and sometimes evident only on last tarsi, rarely obscured throughout. Abdominal segments two to six black, marked with yellow and green. Accessory genitalia of male pale brown; the hook of the second hamule, bounded apically and basally by a small black tooth, shorter and weaker than in *fraternus* and *crassus*.

Referring again to the items in the description above, numbered (1) to (12), *hybridus* is separated from *fraternus* by (4), (7), (8), (9), (10) and (12); from *externus* by (1), (2), (3), (4), (6) and (7); from *crassus* by (2), (4), (5), (8), (9), (10), (11) and (12). Or *fraternus* and *hybridus* are alike, with possible slight differences, in (1), (2), (3), (5), (6) and (11); *externus* and *hybridus* in (5), (8), (9), (10), (11) and (12); *crassus* and *hybridus* in (1), (3), (6) and (7). *Hybridus* differs most widely from *crassus;* the male is very closely related to *fraternus*, while the female has more resemblances to *externus*—a condition which justifies the specific name proposed.

Described from 32 specimens—15 ♂ and 17 ♀:

Cumberland River, Nashville, Tennessee, below the State Penitentiary: May 12, 1901, 1 ♂; May 15, 1901, 1 ♂, 1 ♀; May 19, 1901, 1 ♂, 1 ♀; May 22, 1901, 1 ♂, 3 ♀; May 23, 1901, 6 ♂, 5 ♀; May 30, 1901, 1 ♀; June 2, 1901, 1 ♂; June 6, 1901, 1 ♀; June 7, 1901, 2 ♂, 2 ♀.

Cumberland River, above mouth of Stone River: May 16, 1901, 1 ♂, 3 ♀.

Stone River, near Cumberland River: May 16, 1901, 1 ♂.

Unfortunately much of this material is so teneral as to be of little or no value, and for this reason doubtless some variations have been overlooked. Exuviæ of the species were collected. Specimens of these have been sent to Prof. Needham. The types of the species are placed in the Museum of Comparative Zoölogy, Cambridge, Mass.

A New Bumble Bee from Colorado.

By Wm. H. Ashmead.

Bombus titusi n. sp.

♂.—Length 17 mm. Black and clothed with a black pubescence, the thorax anteriorly with a pale yellowish pubescence, the abdomen *above* clothed with a dense, dark sulphur yellow pubescence, with a slight greenish tinge, the two terminal segments reddish, mixed with a few black hairs, the fringe on the ventral segments black mixed with pale hairs, the middle and hind femora with whitish or pale yellowish hairs.

The head, seen from in front, is a little longer than wide, clothed with black hairs intermixed with a few pale hairs and with some moderately coarse, sparse punctures above and below the ocelli; the malar space smooth, a little longer than wide, less than one-third the length of the eye. The first and second joints of the flagellum are sub-equal, united about as long as the third, the latter being a little shorter than the fourth.

Type.—Cat. No. 5784, U. S. N. M.

Hab.—Lamar, Colorado, September 10, 1898.

Taken by Prof. E. G. Titus.

Pests and Grease.

By F. H. Wolley Dod.

I trust I may be excused for raking up such an old and somewhat hackneyed subject as the treatment of cabinet pests and grease, but there are, doubtless, many entomologists who, like myself, are still unable to cope with them to their entire satisfaction. Of all the acknowledged common enemies to a collection of Lepidoptera, grease is the only one which has ever been a serious nuisance to me amongst the boxes. I am not sure that I have ever been troubled at all with mites on verdigris nor with mould, except such as has appeared on specimens whilst in the relaxing time. The larger insect pests—Dermestidæ (?) and Tineidæ—have sometimes troubled me a little, chiefly amongst papered specimens. One hairy-looking wriggly creature, which has never told me his name nor even made mention of his family, and which, like most insects in the larval stage, appears to divide his time between eating and changeing his skin, is an old enemy of mine who has a habit of boring an almost completely round hole through the paper, and, visiting papered specimen after specimen, has sometimes continued in his wickedness for weeks without discovery.

A pinful of butterflies transfixed sideways is another favorite point of attack of this brute's, and though he used often to bother pinned and set specimens when I employed short English pins, on long Carlsbad pins they seem to be out of his reach, as the grapes were from Æsop's fox in the fable.

I never use naphthaline now in my store boxes, as high setting seems to render it unnecessary except, perhaps, with some of the larger moths, whose bodies or wing tips cannot be kept entirely off the cork. I find naphthaline, however, almost indispensable amongst papered specimens.

Another difficulty I have never been able to overcome—though it scarcely comes under the head of cabinet pests—is the persistent and unsightly way specimens have of springing after being set. I refer to those that have dried unset, and then been relaxed and set, as those set fresh are undoubtedly far less liable to spring, provided they are given time to *thoroughly* dry before being removed from the boards. But I find, even in this so-called dry atmosphere of Alberta, that a very large percentage of insects which have been relaxed will spring sooner or later—upwards, downwards or backwards—as often one way as another, though presumably they have a tendency to reassume the position they had previous to the relaxing. It is true that a slight deviation from the conventionally orthodox style of setting does not in the least detract from its scientific value, which is, of course, the most important point to be considered; but still, if some way could be discovered of preventing the springing which did not involve a large amount of labor (as does applying cement to the bases of wings beneath, which does *not* increase the value of the specimen), I think a great many collectors would gladly employ it. As to mould in the relaxing tins, a few drops of carbolic acid will usually prevent it, though I am always afraid of its acting on the colors of the specimens, especially in the case of non-metallic greens. Some of these, indeed, are so fleeting that it is absolutely impossible (so far as I know) to relax them at all without completely ruining the colors. As an instance of such species I may mention that pretty little Geometrid, *Eucrostis viridipennata*. I have seen this fact mentioned before in these pages with reference to the same species.

But "grease" is my great bugbear of all. It was from the Rev. Joseph Greene's Insect Hunter's Companion (first published in England over thirty years ago) that I originally learned my method of treating against this nuisance. I believe that the methods advised by Dr. Greene were at the time entirely original. He used to remove the contents of the abdomen from the under side, by means of a sharp penknife, as soon as they were firm, but before they were hard and dry. Not only is that a most unnecessary amount of labor, but it entails the necessity of treating each specimen within a fixed time after killing, which—in my own case, at least—is rarely convenient. It may be a good thing in the case of the very largest insects, but the only advantage I can see is that it uses up less of the grease-absorbing agent used afterwards, as it seems impossible to remove all trace of grease without soaking in benzine, naphtha, ether or something such. Amongst the moths the most persistent greasers seem to be the internal feeders, and many of these I find almost certain to become saturated to the wing tips in a marvellously short space of time. These I usually treat as soon as possible, whether they have begun to show signs of greasing or not, but the majority I leave until signs of exudation become evident.

Of all the preparations I have ever tried for the extraction of grease from the bodies ether has certainly given the best results, though, of course, the vessel used must be as nearly air-tight as possible. After removing the abdomen—of course carefully labeled, with corresponding labels on the owners—I usually soak in ether for two or three days, and in clean ether again for two or three more, and with the Sphinges, Bombyces, Geometridæ and Butterflies this is usually sufficient. With many of the Noctuidæ, however, especially if taken at treacle, in particular, the Cucullias and Plusias, which in this district do *not* come to treacle, no amount of ether will completely prevent or remove all the discoloration due to internal juices. The bodies of these I usually soak previously once or twice for 12 or 24 hours in clean warm water; distilled water would doubtless be the best. These genera are, it seems, particularly heavy feeders, and the sugary

substances with which the bodies must be filled are not soluble in ether. Ordinary brown shellac is the handiest thing I know for refixing the bodies. In the case of a badly-greased specimen total immersion is the only remedy I have seen tried. Though I always clean a greasy abdomen of a good specimen in my series, however common or ordinary in type, it is hardly worth while treating any but really valuable forms if the grease has once extended to the wings, except, of course, as an experiment. The most successful result of total immersion, in my experience, was in a unique *Cossus*. It had greased, to use a vulgar expression, "from its teeth to its toe nails;" but after repeated and lengthy baths in methylated ether—I really forget how often I changed the ether—became as clean and fresh-looking as the day it was taken. It still remains a unique, and really no one not in the swim would ever suspect it had been soaked. I recently removed grease completely from the wings of a dozen or more specimens of *Argynnis edwardsii* and *A. halcyone* by merely dipping them (after removing the abdomen) for a *few seconds only* in ether, and then waving them through the air till dry. In some species, however, notably in *Cucullia* and its allied genus *Rancora*, once the grease has extended to the wings, I am baffled. There seems to be carried with the grease that sticky substance previously mentioned, insoluble in ether. I have tried total immersion first in warm water—"an original method," I thought to myself. It seems likely to remain original, as the result is scarcely to be recommended. It certainly removes the trouble, but the cure is every bit as bad and more "widely distributed" than the disease, and subsequent ether baths completely fail to renovate the specimen, which has evermore a plastered and crumpled appearance. The day may come when I may wish to clean a particularly valuable though badly-greased specimen, and I cannot help thinking that there must be some more successful method than the above. Pure distilled water might meet with good results; I have never tried it.

I write to learn rather than to teach, and trust some one will come forward and tell us, through the pages of the NEWS, of some better method of renovating greased specimens, and also of their experience with cabinet pests.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., FEBRUARY, 1902.

With the advent of the New Year I looked hopefully for the first issue of the new volume of the NEWS. I little expected to be jarred by the unseemly figure which adorns the first page of the cover of the January issue, bearing the absurd name of *Quisnam sexcaudatus?* Of course, Mr. Editor, if the NEWS intends to supersede some of our comic weeklies, I suppose my protest, for such this is, is out of place. But for an entomological journal, whose aim should be not to cast ridicule on the study but to frown down such, to present an absurdity on its front page is too much for my dignity. But if I am mistaken in the object of this levity, pray pardon me. Perhaps the figure has been adopted as a sort of trade-mark of your otherwise excellent journal. But, if you will allow me, the anal aspect of even a dipterous larva is far from being an edifying sight.

SUBSCRIBER.

This note was received from a distinguished Hymenopterist, and of course merits our attention. If he were "jarred by the unseemly figure," it was because it was not a hymenopterous insect, and the more chagrined because he evidently took it to be a "fake" insect, which it is not. He was evidently jarred when he found out that what he took for a [name], "*Quisnam*," means what is it? and "*sexcaudatus*," six tailed. Now, inasmuch as the figure is not a fake, it is not out of place in a dignified entomological journal, and therefore a comic weekly would not want it. It is an interesting and valuable study in

comparative anatomy and cannot, therefore, be an "absurdity" in any sense of the word. Our object in putting a fanciful name on the figure was to lead people to find out for themselves what it is. The figure on the cover of the NEWS is merely to designate the volume and is not permanent, and is destroyed when the ten numbers are bound. Our friend, the Hymenopterist, was informed what the figure is by an Orthopterist. If the anal aspect of a dipterous larva is not an edifying sight, we must warn all our writers against sending us any figures of genitalia, especially those of the Hymenoptera; but perhaps our Hymenopterist excepts these. This gentleman's remarks also apply to Bulletin 47, New York State Museum. The Regents of the University of the State of New York, Prof. Needham and Dr. Felt will please take notice.

Entomological Literature.

COMPILED BY HENRY L. VIERECK AND JAMES A. G. REHN.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, will not be noted. Contributions to the anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in heavy-faced type refer to the journals, as numbered in the following list, in which the papers are published; * denotes that the paper in question contains descriptions of new North American forms. The titles of all papers will be quoted in the original and not translated.

2. Transactions of the American Entomological Society, Philadelphia.—**3.** The American Naturalist, Cambridge, Mass.—**4.** The Canadian Entomologist, London, Ont.—**5.** Psyche, Cambridge, Mass.—**6.** Journal of the New York Entomological Society.—**11.** The Annals and Magazine of Natural History, London.—**15.** Biologia Centrali-Americana, London.—**22.** Zoologischer Anzeiger, Leipsic.—**35.** Annales Societé Entomologique de Belgique, Brussels.—**53.** Transactions and Proceedings of the New Zealand Institute, Wellington.—**55.** Le Naturaliste, Paris.—**61c.** Comunicaciones del Museo Nacional de Buenos Aires.—**68.** Science, New York.—**81.** Biologisches Centralblatt, Erlangen.—**82.** Centralblatt für Bakteriologie, Jena.—**84.** Insekten Börse, Leipsic.—**89.** Zoologische Jahrbücher, Jena.—**104.** Mittheilungen Naturhistorisches Museum, Hamburg.—**119.** Archiv für Naturgeschichte, Berlin.—**136.** Stettiner Entomologische Zeitung.

THE GENERAL SUBJECT.—Anon. Proceedings of the New York Entomological Society. Jour. N. Y. Ent. Soc., ix, N. Y., Dec., 1901.—**Anon.** Thierischer Kampher, **84,** Dec., '01.—**Ball, F.** Notes sur l'effet de la temperature sur les Chrysalides, **35,** Dec., '01.—**Comstock, J. H.,** and **Kochi,**

C. The skeleton of the head of insects, **3,** Jan., '02.—**Coupin, H.** Le Chant des Insects. Revue Scientifique, Paris, 4e ser., xvi, Dec. 21, 1900. L'industrie des Insectes, **55,** Dec. 1, '01.—**Hine, J. S.** Observations on insects. The Ohio Naturalist, vol. ii, Dec., 1901.—**Kraepelin, K.** Uber die durch den Schiffsverkehr in Hamburg eingeschlepten Tiere, **104,** xvii, '01.—**Leggett, F. W.** Insect Vision. Journal of the New York Microscopical Society, July, 1901.—**Linden, Dr. G.** Die flugelzeichnung der Insekten, ii, Concl., **81,** Dec., 1901.—**Morgan, T. H.** Regeneration in the Egg, Embryo and Adult, **3,** Dec., '01.—**Sch., S.** Insekten als lebenden Nahrboden für Züchtung von Krankheitskeimen, **84,** Dec., '01.—**Van Dyke, E. J.** Observations upon the faunal regions of California from the standpoint of a Coleopterist (abstract), **6,** Dec., 1901.—**Wasman, S. J.** Giebt es thatsachlichen Arten die heute noch in der stammesentwicklung begriffen sind? Zugleich mit allgemeinen bemerkungen über die entwicklung der *Myrmekophile* und *Termitophile* und über das Wesen der *Symphilie* (118). Beitrag zur Kenntnis der *Myrmekophilen* und *Termitophilen*, iii, concl., **81,** Dec., '91.—**Zimmermann, A.** Sammelreferate über die tierischen und pflanzlichen Parasiten der tropischen Kultur pflanzen, ii, Die Parasiten des Kakaos, **82,** Dec., '01.

ECONOMIC ENTOMOLOGY.—**Anon.** Catalogue of collections of Pests and Insecticides. Commission of Agricultural Parasitology of the secretary for public promotion, Mexico, 1901.—**Britton, W. E.** The San José scale insect; its appearance and spread in Connecticut, Connecticut Agric. Experim. Sta., New Haven, Conn., Bull., 135, Dec., 1901.—**Eysell, A.** Der Malaria parasit und seine Ubertragung auf den Menschen, figs., Abhanlungen und Bericht des Vereins für Naturkunde zu Kassel, xlvi, 1901.—**Slingerland, M. V.** The scientific name of the cherry fruit-fly, **4,** Jan., '02.—**Smith, J. B.** Concerning Certain Mosquitoes, **68,** Jan. 3, 1902.—**Underwood, W. L.** Goldfish as destroyers of mosquito larvæ, **68,** Dec. 27, '02.

ARACHNIDA.—**Banks, N.** Notes on some spiders of Walkenaer, Koch and others, **6,** Dec. 1901.—**Cambridge, F. O. P.** Arachnida Araneidea (Mexico and Central America), 2 pls, **15,** Arachnida Araneidea, ii.—**Kobert, Dr. R.** Beitrag zur Kentniss der gift-spinnen, Stuttgart, 1901.—**Leonardi, A. B. G.** *Acari* sud americani, **22,** Dec. '01.—**Pocock, R. I.** Some new and old Genera of S. American Avicularïidæ,* **11,** Dec. '01.—**Soar, C. D.** Larval Water-mites on Aquatic Animals. The American Monthly Microscopical Journal, xxii, no. 12, Dec. 1901.

MYRIOPODA.—**Attem, C. F.** Neue Polydesmiden des Hamburger Museums, **104,** xvii, '01.—**Attem, C. F.** Neue, durch den Scheffsverkehr in Hamburg eingeschleppte *Myriopoden*, **104,** xvii, '01.

PLATYPTERA.—**Enderlein, G.** Neue deutsche und exotische Psociden, sowie Bemerkungen zur Systematik, **89,** '01.

ODONATA.—**Calvert, P. P.** Neuroptera (Odonata), (Mexico and Central America),* **15,** Neuroptera.

ORTHOPTERA.—Anon. The Destructive Migratory Locust of the Argentine Republic. The Agricultural Journal, Cape Town, Nov. 7, 1901.—**McNary, J.** Variability of the Venation in Grasshoppers, **68,** Dec. 27, '01.—**Rehn, J. A. G.** Random Notes on North American Orthoptera, **2,** xxvii.—**Scudder, S. H.** The species of Gryllus found in the United States east of the Sierra Nevadas,* **5,** i, Jan., 1902.—**Waker, E. M.** The Canadian species of Trimerotropis,* **4,** Jan. '02.

HEMIPTERA.—Ball, E. D. West Coast and other Jassidæ (Homoptera),* **4,** Jan. '02 —**Buckton, G. B.** A Monograph of the Membracidæ, ii,* Monographiæ Entomologicæ, Part ii, London.—**Distant, W. L.** Rhynchotal Notes, xi, Heteroptera: Fam. Lygæidæ, **11,** Dec. '01.—**King, G. B.** A new species of Saissetia (Coccidæ) with notes on some of the species of the genus not well understood (ill.), **5,** i, Jan., 1902.—**Kirkaldy, G. W.** Some systematic work published during the last five years upon North American Auchenorrhynchus Homoptera (Rhynchota), The Entomologist, xxxiv, Dec. 1901.—**Lyman, H. H.** *Eulecanium Lymani,* **4,** Jan , '02.—**Newstead, R.** Monograph of the Coccidæ of the British Isles, vol: i, London.—

COLEOPTERA.—Berg, C. Silfidos Argentinos, **61c,** i, No. 9.—**Bernhauer, M.** Neue exotische Arten der gattung *Aleochara* Gravh., **136,** No. 7-12, '01.—**Clouët des Pesmches, L.** Essai monographique sur le genre Rhyssemus (Coleopteres lamellicornes-Tribu des Aphodiides). Memoires de la Societe Entomologique de Belgique, viii, Bruxelles, '01.—**Enderlein, G.** *Meropathus chuni* nov. gen., nov. spec., eine neue Helephorinengattung von der Kerguelen-Insel., **22,** xxiv, Mar., '01.—**Klages, H.** Supplement to Dr. John Hamilton's List of the Coleoptera of Southwestern Pennsylvania. Annals of the Carnegie Museum, i, No. 1, Oct., 1901. —**Knaus, Warren.** Additions to the list of Kansas Coleoptera for the years 1899 and 1900. Trans. Kans. Acad. Science, xvii, 1899, 1900.—**Lyman, H. H.** Synonymic notes, **4,** Jan., '02.—**Ohaus, Fr.** Revision der Heterosterniden,* **136,** No. 7-12, '01.—**Pic, M.** Descriptions de Coléopteres Nouveaux del 'Amerique Méridionale, **55,** Dec. 1, '01.—**Tutt, J. W.** Migration and dispersal of insects: Coleoptera. The Ent. Record and Jour. of Variation, xiii, Dec., 1901.—**Van Dyke, E. J.** Faunistic studies in the Coleoptera of California (Abstract). See General Subject.

DIPTERA.—Anon. *Eristalis tenax,* Longitudinal Section of Halter. *Sarcophaga carnaria,* Longitudinal Section of Halter. Anterior Thoracic Spiracle of Blow-fly. The American Monthly Microscopical Journal, xxii, No. 11, Nov., 1901.—**Chagnon, G.** The Syrphidæ of the Province of Quebec. Le Naturaliste Canadien, Nov. 1901.—**Dyar, H. G.** Descriptions of the larvæ of three mosquitoes. The life-history of *Uranotænia sapphirina,* **6,** Dec., 1901.—**Enderlein, G.** Zur kenntniss der Flöhe und Sand flöhe, Neue und wenig bekannte *Puliciden* und *Sarcopsylliden,* **89,** '01.—**Hine, J. S.** Collecting Tabanidæ. The Ohio Naturalist, vol. ii, Dec., 1901.—**Wheeler, W. M.** An Extraordinary Ant Guest, **3,** Dec., '01.

LEPIDOPTERA.—Berg, C. Namensänderung zweier Lepidopten-Gat-

tungen, **6ic,** i, No. 9.—**Beutenmuller, W.** The larva of *Catocala illecta*. The larva of *Homoptera edusa*, **6,** ix, Dec., 1901.—**Dyar, H. G.** Life Histories of North American Geometridæ, xxix, **5,** ix, Jan., 1902.—**Ghidini, A.** Le Ver a soie de l'Ailante daus le Tessin (*Attacus cynthia*). Bulletin de la Société Nationale d'Acclimatation de France, xlviii, Nov., 1901.—**Gibson, A.** Notes on the larvæ of *Arctia virgo* L., **4,** Jan., '02.—**Godman, F. D.** Lepidoptera Rhopalocera (Mexico and Central America),* **15,** Lepid. Rhopal., ii.—**Joutel, L. H.** Note on *Sesia sigmoidea*. Larva of *Isochætes beutenmülleri* on Staten Island, N. Y. A self-decorating Geometrid larva, **6,** ix, Dec., 1901.—**Lyman, H. H.** Synonymic notes, **4,** Jan., '02.—**Major, W.** Proboscis of Butterfly. The American Monthly Microscopical Journal, xxii, No. 11, Nov., 1901.—**Quail, A.** Embryological structure of New Zealand Lepidoptera, **53,** Part 1, July, '01.—**Soule, C. G.** The hatching of *Eacles imperialis*. **5,** Jan., 1902.—**Weeks, A. G.** Descriptions of ten new butterflies of the genus *Pamphila*. Proc. N. E. Zoological Club, ii, Dec. 23, 1901.—**Slingerland, M. V.** The scientific name of the cherry fruit-fly, **4,** Jan., '02.

HYMENOPTERA.—Cockerell, T. D. A. Catalogo de las Abejas de Mexico, Biblioteca Agricola de la Secretaria de Fomento.—**Dickel, Ferd.** Über Petrunkewitsch's Untersuchungs ergebnisse von Bieneneiern, **22,** Dec., 1901.—**Enderlein, G.** Neue *Evaniiden, Stephaniden Mutilliden* (*Apterogyna*), *Proctotrupiden* und *Chalcididen*, mit einer bestimmungstabelle der Afrikanischen *Stephaniden*, **119,** '01.—**Forel, A.** Varietes Myrmecologiques,* **35,** Dec. '01.—**Forel, A.** Nouvelles especes de *Ponerinæ* (Avec un nouveau sous genre et une espece nouvelle d' *Eciton*), Revue Suisse de Zoologie, Annales de la Societe Zoologique Suisse et du Musse D'Hist. Natur. de Geneve, Geneva, Dec., 1901.—**Forel, A.** Formiciden des Naturhistorischen Museums zu Hamburg, Neue *Calyptomyrmex*, *Dacryon*, *Podomyrma* und *Echinopla* arten, **104,** xvii, '01.—**Forel, A.** Fourmis termitophages, Lestobiose *Atta tardigrada*, sous-genres d' *Euponera*,* **35,** Dec, '01—**Harrington, W. H.** Fauna Ottawænsis. Hymenoptera (Sphegoidea), The Ottawa Naturalist, xv, no. 10, Jan., 1902.—**Viereck, H. L.** New species of the subfamily Pseninæ,* **2,** xxvii.—**Wheeler, W. M.** An Extraordinary Ant-Guest, **3,** Dec., 01.

Insects Injurious to Staple Crops. By E. Dwight Sanderson, B. S. Agr., Entomologist, Delaware College Agric. Exper. Station; Assoc. Prof. of Zoology, Delaware College. John Wiley and Sons, New York. Price, $1.50. This is a work of 295 pages devoted to economic entomology. Its author has had a considerable experience as a practical entomologist, and has designed a work of reference for the farmer or others who do not have access to the scattered literature of this branch of entomology. The work has a distinct reason for its production, and can't fail to be of direct value to those for whom it is intended. The illustrations are numerous and the treatment non-technical, and a farmer of ordinary intelligence should have no difficulty in understanding it.—H. S.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

In the June NEWS I note an article on the collecting regions around Las Vegas, N. M., and would like to add a few remarks with regard to the regions which lie to the west of Springer, and are known as the Moreno Valley and Ute Creek districts. In the month of February I made a visit to Elizabethtown, and, judging from the indications at that time, and from information gathered from the natives, I believe these regions will prove very rich in new material.

Elizabethtown is situated near the head of the Moreno Valley, at an elevation of over 8000 feet, and is practically surrounded by mountains that range in height from 10,000 to 14,000 feet. The only way of access to this valley that I know of is through a narrow canon some 15 miles in length.

This valley is so completely shut off from the surrounding country that a great deal of the fauna of the adjacent district is not represented here.

The railroad journey ends at Springer, on the Atcheson, Topeka & Santa Fe R. R. From here you begin a stage journey of 57 miles to Elizabethtown. The first 21 miles is from Springer to Cimarron, and passes through a rolling country consisting of meadows, irrigated lands and one or two small lakes.

At Cimarron you will have to stop over night, and the first place will be at Mr. Hawkins', the owner of the stage line.

From Cimarron to Ute Creek (12 miles) the road begins to enter the foothills; from Ute Creek to Elizabethtown (20 miles) then entering the canon shortly after leaving Ute Creek and emerging into a beautiful valley about five-eighths of a mile from Elizabethtown.

The elevations of the posts on this trip are: Springer, 5800 feet; Cimarron, 6500 feet; Ute Creek, 7500 feet; Elizabethtown, 8500 feet. So you see that there is considerable altitude. The snows are never very heavy at Elizabethtown; when I left, the last of February, there was about six inches on the level, and at Springer none at all.

At Elizabethtown there is a family from Philadelphia by the name of Lynch, and I feel sure that one could get accommodations here; for they are very pleasant, and are always glad to receive strangers. They have been here for years, and are well acquainted with the country.—M. C. HOAG, Maxwell, Iowa.

TO COLLECT PAIRS OF DRAGONFLIES. POISONING SPECIMENS.—Pairs of dragonflies, papered with a single pair in an envelope, are often valuable in rendering the specific determination of the female certain, and such material may have a further value for the student of variation. If a vial of small insect pins is carried into the field, each pair, as it is taken, may be impaled on a pin and dropped into the cyanide jar. Two cyanide jars may be used, and a distinction made between those pairs

taken in copulation and those in which the female was being only held by the male. In papering material this should be noted on the envelope, and when a male and female, taken separately, are placed in the same envelope, it should be clearly indicated that they were not associated at the time of capture.

At times it may be a convenient way of placing naphthaline in insect boxes to dissolve the crystals or moth balls in gasoline or carbon bisulphide, and pour the solution in the box. The gas poisons the contents thoroughly, and the naphthaline is left in the box in a form which cannot injure the specimens, as sometimes happens when cones or crystals are used.—E. B. WILLIAMSON, Bluffton, Ind.

A GREEDY INSECT.—While collecting insects on the Prairie near Golden, Colorado, on the 27th of July I caught a half-grown female Mantid. I put it in a glass jar, and left it without food till noon the next day, when I gave it eight living house flies. Then did it not only demonstrate that it was hungry, but also illustrated the proverb that "He who grasps too much looses all." It immediately seized a fly with each foreleg, and, transferring one to its mouth, caught the third. Still unsatisfied, it, with inexcusable greediness, attempted to seize a fourth fly. But it was a disastrous attempt; for, instead of getting the coveted fly, it lost one of those already captured. With a disgusted look, it then gave up the attempt to catch more than it could handle, and went to eating ravenously. Within an hour it caught and devoured seven of the flies and tried to catch the eighth.—A. N. CAUDELL, Washington, D. C.

"REPORTS from the orange country say that the imported lady bugs are still running up and down the San Jose scale in a manner that threatens to drive that pest on the high C."

I send the above clipping from the *Minneapolis Journal*, which I think is worthy of a place in the "funny column" of the NEWS.—RAYMOND OSBURN, Fargo, N. D.

Doings of Societies.

A regular stated meeting of the Feldman Collecting Social was held December 18, 1901, at the residence of Mr. H. W. Wenzel, 1523 S. 13th St. Eleven persons present. Visitors, Messrs. Joutel and Schaeffer of New York. President Charles W. Johnson in the Chair.

Prof. Smith said that he had taken some very fine photographs of the mouth and anal parts of mosquito larvæ. These parts of the larvæ can be used in their determination. A specimen of the larva of *Culex sylvestris* which he had examined had the breathing tubes which are found in the pupa

state. This seems to indicate that the tubes are formed in the larvæ before transforming ; the connection between the tracheæ and the breathing tubes was severed, showing that the larvæ use these tubes before changing.

Mr. Schaeffer spoke of *Europs pallipennis* taken at Fort Lee, N. J., some years ago, but of which he has since found quite a number of specimens in June, on the gummy excretion of hickory. Specimens were submitted to Mr. Schwarz, who considered it very strange to find this species so far north, which before had not been recorded north of Florida.

Mr. Daecke exhibited a specimen of *Polypleurus perforatus* taken at Manumuskin, N. J., April 24, 1901, as a species new to New Jersey.

Dr. Castle exhibited some specimens which he had collected in the Blue Mountains, Pennsylvania, among which was a specimen of *Lebasiella pallipes* Klug, of which there are only two specimens in this city, the other being in the collection of Dr. Horn, from Texas.

Mr. Joutel stated that Dr. Felt and himself were working upon *Saperda*, and made the following remarks upon the genus: He said that they divided the larvæ into two groups —one living in the dead wood and the other in the living trees —and that the larvæ of each species had a different way of working in the wood by which means they could be separated better than by any characters of the larvæ themselves, as they seemed to be very much alike. They have found two new species, one related to *Saperda tridentata* and the other to *S. calcarata*.

Mr. Johnson exhibited a specimen of *Dasyllis* taken by Mr. Daecke at Mamumuskin, N. J. The specimen agrees well with Macquart's description of *affinis*.

WILLIAM R. REINICK, *Secretary*.

The twenty-second regular meeting of the Harris Club was held at 35 Court Street, on the evening of December 10, 1901. President Newcomb presided; twelve persons being present. Exhibits of Graptas were made by Messrs. Newcomb, Low and Rogers. There was a general discussion of dimorphism

as exhibited in this genus. Mr. Field showed a few Geometridæ taken on Mt. Katahdin. Several members commented on the unusual abundance of cocoons of the Saturniidæ this year.

W. L. W. FIELD, *Secretary.*

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia, was held December 26, 1901, at which the following officers were elected:

Director, Philip Laurent; *Vice-Director*, H. W. Wenzel; *Treasurer*, E. T. Cresson; *Recorder*, Henry Skinner; *Conservator*, Henry Skinner; *Publication Committee*, J. H. Ridings, C. W. Johnson; *Secretary*, C. W. Johnson.

HENRY SKINNER, *Recorder.*

A meeting of the American Entomological Society was held December 26, 1901, at which the following officers were elected:

President, Philip P. Calvert; *Vice-President*, H. W. Wenzel; *Treasurer*, E. T. Cresson; *Rec. Secretary*, Henry Skinner; *Corres. Secretary*, C. W. Johnson; *Curator*, Henry Skinner; *Librarian*, W. J. Fox.

Publication Committee.—E. T. Cresson, C. F. Seiss, B. H. Smith.

Executive Committee.—P. Laurent, Charles Liebeck, H. W. Wenzel.

Finance Committee.—J. W. McAllister, C. C. Cresson, C. S. Welles.

Mr. Laurent said *Tenodera sinensis* seems to be holding its own at Mt. Airy, Philadelphia. He had gathered about half a barrel of egg masses. The species likes blackberry and briar bushes as a place of abode and avoids low ground with low herbage. Dr. Calvert stated that he had distributed some egg masses at the Botanical Garden of the University of Pennsylvania, but had seen no result. The difference in the character of the vegetation in the Botanical Garden would probably account for their absence. The Curator reported that the Society and the Entomological Section of the Academy had received 103,988 insects during 1901.

HENRY SKINNER, *Secretary.*

OBITUARY

THE DEATH OF TWO EMINENT LEPIDOPTERISTS.

The sad intelligence has just reached me of the death of Lionel de Nicéville, of Calcutta, who fell a victim on the third of December to malarial fever. Mr. de Nicéville was the foremost lepidopterist of India. His great work on the Butterflies of India, Burmah and Ceylon, three volumes of which have been published, will constitute an enduring monument to his learning. The fourth volume has engaged his time and thought for many years past, and lepidopterists have been earnestly looking for its appearance. It is to be hoped that his untimely death will not prevent its publication.

Mr. de Nicéville had endeared himself greatly to all those who came into relations with him as a friend or as a correspondent. The science of entomology has lost in him one of its brightest ornaments.

The death of Mr. William Doherty in Uganda, where he was engaged in collecting for the Hon. Walter Rothschild and the writer, has created another great vacancy in the ranks of those who have been occupied during the last twenty years in fostering biological research. Details as to Mr. Doherty's death are not as yet available. All that is known is that he was seized with a fatal illness when in camp, was taken by his faithful lepchas, whom he brought with him from Darjeeling, and who had been the companions of his wanderings for many years in the islands of the Indo-Malayan Archipelago, to the nearest military station, where he could receive medical attention, and there died. The vast collections which he made throughout India, Burmah and the islands of the East as far south as New Guinea are distributed in many hands, but the bulk of them are in the possession of the Hon. Walter Rothschild and the writer of these lines. The story of his life, if it could be told, would furnish one of the most fascinating and brilliant chapters in the annals of scientific exploration. The writer hopes to be able to furnish material enough from lettters and other sources of information to give a picture of his long-continued and earnest labors in behalf of scientific research. It is probable that no

man during the past century has traveled more widely in little known parts of the Orient than Mr. Doherty, and no man has discovered more species new to science than he within the last two decades. His death has brought a keen sense of personal affliction and of loss to those who knew him and respected him for his magnificent attainments as well as for his intrepid courage.—W. J. HOLLAND, Carnegie Museum, January 7, 1902.

Mr. Ottomar Dietz, of New York City, died on Wednesday, December 25, 1901, at his house, 679 East 141st Street. He had been ill only twelve days and only six days confined to his bed. The first signs of his illness were noticeable on December 12th, which were considered an attack of malaria. Later, the physicians found some heart trouble, and during the last two days typhoid pneumonia set in. A hemorrhage of the lungs brought the sudden end at 5.30 A.M. He leaves a widow and a daughter. Born in Bremen, Germany, April 21, 1854, his parents later removed to Konigsberg where he received his early education. He came to America in 1880, living in Milwaukee and Cincinnati and later settled in New York, where he was engaged in the newspaper advertising business. In Milwaukee he made the acquaintance of Mr. F. Rauterberg, and seeing his collection became so much interested that he decided to form a collection for himself. As a collector of Coleoptera he was well known, was one of the founders of the New York Entomological Society and member of same. He left a large and valuable collection of Coleoptera, on which he had worked for many years, and in regard to neatness in mounting and arrangement it is one of the best. His last collecting trip in June, 1901, took him to Brownsville, Texas, and in previous years he had visited Virginia and Florida for the same purpose. He was a very enthusiastic collector and had a large circle of entomological friends who will deeply regret his sudden and untimely end.

Charles Caleb Cresson, for many years a member of the American Entomological Society, and one of its Finance Committee, died January 9th in his eighty-sixth year.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, the sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly; 4th, All insects must be mounted. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2-cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Lepidoptera for exchange. *Argynnis diana, Cal. borealis, Cat. phalanga, lacrymosa* and many others. Also live pupæ of nearly all the Sphingidæ found in this locality. Rare Catocalas and Ex. Papilios especially desired.—Herman J. Erb. 322 E. 13th St., N. Y.

Lepidoptera.—Exchange *Cat. præclara, C. whitneyi, C. luciana, relicta* and many others. Also some other good Noctuids, live pupæ of *Parasa chloris, Logoa crispata* and others. *Catocala badia* especially desired.—Wm. Rienecker, 66 Nelson Ave., Jersey City, N. J.

Exchange.—Coleoptera in papers with data, send lists.—Rev. J. C. Warren, Pike, N. Y.

Dragonflies.—I have a number of N. Am. Duplicates to exchange; wish female *Enallagmas* especially.—E. B. Williamson, Bluffton, Indiana.

Orthoptera.—Wanted, specimens and literature for cash or exchange. Frank E. Lutz, Zoological Bdg. University of Chicago, Chicago, Ill.

Wanted.—March and June of Entomological News, Vol. viii, 1897.—F. E. Watson, 974 E. 168th St., New York City.

Exchange.—Thousands of moths and butterflies for native or exotic. Want *Catocala* moths especially. Send lists to Joseph H. Reading, 775 N. Rockwell St., Chicago, Ill.

Exchange.—Butterflies of this neighborhood for those not in my collection. Have also a number of chrysalids of *Feniseca tarquinius* for exchange.—Wilmon Newell, Wooster, Ohio.

Wanted.—January number of Vol, ix. 1898, Entomological News.—A Stewart, Librarian, West Virginia Agric. Exper. Station, Morgantown, W. Va.

Lepidoptera.—Exchange desired with collectors from all parts of the United States and Canada. Especially for mounted specimens. Correspondence solicited in both English and German.—A. Kwiat, 701 Larrabee St., Chicago, Ill.

Wanted.—Complete sets, Insect Life; Psyche; Riley's Missouri Reports; also Entomological Magazines, Bulletins or books not in my library. Send lists with lowest cash price, or will give good exchange in native and exotic Lepidoptera.—W. D. Kearfott, 91 Liberty Street, New York City.

Lepidoptera Wanted.—Collectors in all parts of the world. Cash for Disiderata. Correspondence in French, German and Spanish.—M. E. Hoag, Maxwell, Iowa.

Coleoptera.—*Saperda* wanted, named or unamed. Especially from the Western States. Will give good exchange or pay cash. Also ask the loan of material in this genus for study.—L. H. Joutel, 164 E. 117th St., New York.

I have bred specimens of *Saperda puncticollis, concolor, lateralis* and *discoidea; Elasmocerus terminatus; Ichnea laticornis; Melasis pectinicornis; Fornax orchesides*, etc. Want *Saperda cretata* and *tridentata* and other Cerambycidæ and Cleridæ.—L. H. Joutel, 164 E. 117th St., N. Y.

Desires Papilionidæ, Cicindelidæ, Cycrini and Cetonidæ of the world, either by purchase or exchange.—Geo. A. Ehrmann, 2314 Sarrh Street, Pittsburgh, Pa.

Wanted.—Perlidæ and the immature stages of aquatic insects generally. I will make determinations where possible, and give exchanges, when desired.—James G. Needham, Lake Forest, Ill.

Cash or good exchange given for no. 3. vol. ii. and no. 1, vol. iii, of Papilio, and vols. i, ii and iii of Bulletin Brooklyn Ent. Soc.—H. H. Newcomb, 35 Court Street, Boston, Mass.

Lepidoptera.—*Catocala badia. praeclara*, etc.; also other Noctuids in exchange for specimens new to me.—Geo. Kircher, 573 Germania Avenue, Jersey City Heights, N. J.

Wanted for cash or exchange, Pupæ of the foll: Sphinges; *T. modesta; S. ermitus. lucitiosa; Kalmiæ; D. hylæus; C. juglandis; A. versicolor; A. nessus; Thy abbotii.* Address with prices.—Henry Engel P. O. Box 369, Pittsburg, Pa.

Lepidoptera.—Exchange desired with collectors in any State. Please send lists.—John & Hurd Comstock, 1572 Ridge Ave., Evanston, Ill.

Lepidoptera of United States and Europe to exchange for other North American specimens not in my collection. Correspondence in English and German.—Charles Schlieter, 601 Christiana Ave., Chicago, Ill.

Wanted.—Microlepidoptera, especially Tineina of the United States. Will either buy or give exchanges. Desire to open correspondence with collectors of these groups and will determine material.—W. G. Dietz, 21 N. Vine Street. Hazelton, Pa.

Exchange.—200 Chrysalids; *Papilio Ajax;* 80 Chrysalids; *Papilo turnus.* Live Pupas of *Myrones* and Cocoons of *Promethus.* Will take Exotic fles, Western bird skins and humming birds' nests.—W. H Valway, 2671 Broadway, Cleveland, Ohio.

Wanted live Pupæ, also Lepidoptera, Coleoptera. Will give European and Exotic species in exchange.—Arnold Voelschow, Schwerin Meckl., Germany.

Lepidoptera for exchange from United States, Europe, South America and East India for specimens new to my collection.—A. Troschel, 446 Larchmont Ave., Chicago.

Wanted.—Hymenoptera, especially ants and wasps from the Southern and Western States and American Termites, and any entomological publications.—Canisius College Museum (H. Wolff, S. J.), Buffalo, N. Y.

Exchange.—*Cicindela puritana* for any Cicindelidæ new to my collection. Will exchange also N. American or European Coleoptera. Send for lists. Correspondence in English and French.—C. Crozet, New Park Ave., Hartford, Conn.

Diptera.—Wanted, as many Asilina as possible from all parts of North America.—Write for particulars to Prof. C. H. Fernald, Amherst, Mass.

Lepidoptera.—*Argynnis nitocris* var. *nigrocærulea* Ckll., for exchange. Also many other rare butterflies.—Henry Skinner, Acad. Nat. Sciences, 1900 Race Street, Philadelphia.

Exchange.—British Columbia Lepidoptera. Only North American species wanted. Send lists.—Ernest M. Anderson, 64 Superior Street, Victoria, B. C.

"THE ELEMENTS OF INSECT ANATOMY"

An outline for the use of Students in Entomological Laboratories. By COMSTOCK & KELLOGG.

A practical guide for laboratory work in Entomology by college classes, including the study of the external and internal anatomy of insects and the comparative anatomy of the mouth parts and wings, together with the methods of insect histology. It is used as a text-book in Cornell University, Stanford University, Iowa State Agricultural College, University of Kansas, Washington State Agricultural College, University of Illinois, Texas State Agricultural College, and numerous other universities and agricultural colleges. 145 pp., bound in brown-gray buckram. Price $1.00. Address,

COMSTOCK PUBLISHING CO., Ithaca, New York.

NO ENTOMOLOGIST

SHOULD BE WITHOUT LOCALITY LABELS

"Those persons not using such pin labels for their specimens are fifteen years behind the times, and their collections will be valueless in the future."—H. Skinner.

Labels like sample will be printed for any locality at the following prices: 100 labels 5 cts.; 500 labels 15 cts.; 1000 labels 25 cts. Postage is always extra.

PHILIP NELL, 3619 N. MARSHALL ST., PHILADELPHIA, PA.

Space is left to put in the date of capture with pen and ink

Wanted.

Collectors in all parts of the world, by exchange or cash. Correspondence in French, German, Spanish or English.

M. E. HOAG, D.D.S., Maxwell, Iowa.

Price List of Lepidoptera and Catalogue of Entomological Supplies of the American Entomological Co.

1040 DE KALB AVENUE - - BROOKLYN, NEW YORK

No. 3

Ready for Distribution Nov. 15, 1901.

Price, 5 Cts., Refunded to Buyers.

Manufacturers of the Original and Celebrated

SCHMITT INSECT BOXES

BUILDERS OF

CABINETS AND INSECT CASES

NOVELTIES IN THE SUPPLY LINE CONSTANTLY ADDED

When Writing Please Mention "Entomological News."

JOHN AKHURST

TAXIDERMIST AND DEALER IN ENTOMOLOGICAL SUPPLIES

Improved Entomological Forceps.

Fine Carlsbader Insect Pins a specialty. Price-list sent on application.

78 Ashland Place,
Brooklyn, N. Y.

BOOKS WANTED.

Will p y fair price for books and pamphlets on Natural History, especially Entomology.

WILLIAM J. GERHARD,
2209 Callowhill Street, Philadelphia, Pa.

For Sale.—The collection of Lepidoptera and Coleoptera belonging to the late P. C. Truman of Volga, South Dakota. The collection comprises nearly sixteen thousand (16,000) specimens of Lepidoptera and nearly eight thousand (8000) specimens of Coleoptera, besides several thousand insects for exchange. Address,

Mrs. MARY E. TRUMAN,
Volga, South Dakota.

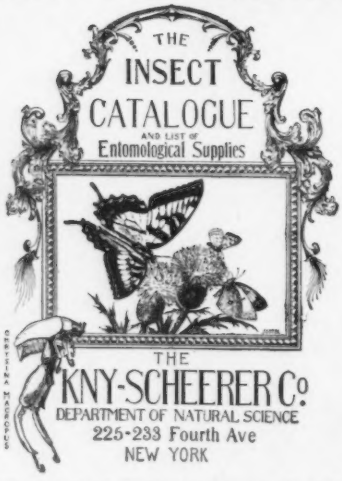
THE KNY-SCHEERER CO.

Department of Natural Science

Dr. G. Lagai.

ENTOMOLOGICAL SPECIMENS

School Collections
Metamorphoses
Biological Models
Wall Charts
Write for Special Quotations



NEW YORK, U. S. A.
225-233 Fourth Ave.

ENTOMOLOGICAL SUPPLIES.

Lantern Slides
Boxes, Cases, Cabinets, Forceps, Pins, Nets, Dissecting Instruments, Museum Supplies,

New Illustrated Catalogue on Application

When Writing Please Mention "Entomological News."

P. C. STOCKHAUSEN, PRINTER: 56 N. 7TH ST., PHILADELPHIA